#### BOSTON UNIVERSITY

## Astrophysics Seminar Monday, November 17, 2014

**3:15 pm** Refreshments CAS Room 500

#### **3:30 pm** Seminar CAS Room 502

#### Next Week

- James Lowenthal Smith College
- Chasing High-Redshift
  Galaxy Clusters
  with the Large Millimeter
  Telescope



http://www.bu.edu/iar/seminars/ current-seminars/

# Toward Estimating the Thermal History of the Cosmological Dark Age

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### Abstract:

Experimental constraint on the thermal history of neutral gas that filled universe during the cosmological Dark Age is a forefront challenge in cosmology. The 21 cm transition of Hydrogen is predicted to be a robust thermometer for the epoch before widespread star formation, and detection is anticipated to enable strong tests of cosmological models. The ground-based Large Aperture Experiment to Detect the Dark Age (LEDA) is working to detect the 21 cm transition at a redshift of ~ 20 (60-70 MHz). LEDA instrumentation is deployed at Long Wavelength Array sites in New Mexico and California and includes the third largest radio astronomy correlator in the world. An unusual experimental approach combines interferometry and radiometry in an effort to work around sources of systematic error such as ionospheric fluctuations and uncertainties in antenna gain patterns. I will discuss current instrumentation, early results, the trajectory of continuing development as LEDA prepares for its second data acquisition season, and a still more ambitious very large array concept (SuperLEDA).



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